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LOCAL SWITCHING MOU COST STUDY

This Report describes SWBT's local switching study and identifies Staff's concerns. This report is divided into the following sections: (1) Purpose; (2) Concerns and Recommended Modifications; (3) Summary of Recommended Modifications; and (4) Description of Study.

Purpose

SWBT's local switching cost study identifies the TELRIC costs per minute of use for local switching. SWBT's local switching study uses the following inputs to determine the local switching per minute investment: (1) switching investment calculated by the SCIS/MO model; (2) hardware investment; and (3) minutes of use (MOU). The study then converts investments into costs through utilization of the ACES model. SWBT's local switching study geographically disaggregates costs as follows:

Group 1 - offices in rate groups C and D
Group 2 - offices in rate group B
Group 3 - offices in rate group A

Concerns and Recommended Modifications

The following section identifies our concerns and lists our recommendations for the local switching study. In reviewing SWBT's local switching study, we have identified the following areas of concern: (1) modifications to the SCIS/MO model as discussed in the SCIS report; (2) modification of the hardware factor; (3) forward looking MOU; and (4) geographic deaveraging.

<u>SCIS/MO Inputs</u>

As discussed in the SCIS report section, several modifications are recommended. Because the local switching study uses SCIS/MO investment outputs, the modifications are relevant in this study. Refer to the SCIS report for a detailed description of recommended modifications.

<u>Hardware Factor</u>

The proposed hardware factor is a composite of the 5ESS and DMS-100 switches which results in a factor of **____** . The factor is developed using a ratio of hardware investment for all DMS-100 and 5ESS switches to total investment for DMS-100 and 5ESS switches, respectively. This factor is then applied to all switches used in the local switching study. However, this calculation is erroneous because data was only gathered from DMS-100 and 5ESS switches; DMS-10 and Ericsson AXE-10 switches could conceivably have lower hardware investments. Because SWBT provided no data to support a hardware factor for DMS-10 and Ericsson AXE-10 switches, the cost studies should be modified so that the hardware factor is only applied to the DMS-100 and 5ESS switches.

Further, Staff has a concern over the manner in which the hardware factor, even after modification as recommended above, is applied to switching investment. SWBT's existing methodology is as follows: (1) total Engineering Furnished and Installed (EF&I) switching investment is multiplied by the hardware factor; (2) the line investment is subtracted from this figure to give the total non-line investment. The fact that the hardware factor is applied to the total investment (which includes both non-line and line investment), resulting in a larger number, while the line investment which is subtracted from this is not multiplied by the hardware factor appears suspect (even though the line investment was used to develop the hardware factor). Therefore it is our recommendation that the hardware factor be a switch specific ratio of total hardware investment to total non-line investment. The hardware factor should then be applied to the non-line investment only. The non-line investment is the total EF&I minus the line investment.

As described above, the hardware investment accounts for the following equipment: (1) conference ports; (2) class model resource card for calling name delivery; (3) input/output port for simplified message desk interface; (4) message waiting power supply for lamps; (5) specialized announcements; (6) tone circuits; (7) private network trunking (i.e., tie facilities for Plexar); (8) data sets; and (9) stutter dial tone equipment. Because SWBT has included investment for the functionality provided by the hardware factor equipment in the local switching study, the costs will be recovered in the local switching element. Therefore, SWBT should not be allowed to charge separately for any of the functionality provided by the equipment included in the hardware factor.

Staff has the concern that some components of the hardware investment may be double recovered. Specifically, it is not known exactly what types of ports are included in the input/output port for simplified message desk interface investment total. If maintenance input/output ports are included then this would constitute double recovery since maintenance ports are included in another investment category in the SCIS/MO study. Although it is not known if the input/output port or any other item in the hardware category is double recovering investment, the hardware factor has a substantial effect on local switching costs. In addition, it is not clear at this time if the hardware factor is forward looking; data may have been gathered from old technology. If this is the case and forward looking technology is less expensive, then the hardware factor could be overstated.

Forward Looking MOU

In its TELRIC local switching study, SWBT develops MOU by taking the working lines in each rate group times the average monthly MOU per line, and then annualizes this figure. The working lines used are lines served by digital switches only, consistent with SWBT's exclusion of analog switches from its studies. Because SWBT's existing analog switches generally serve urban areas with high line counts, we are concerned that the MOU data excluding analog offices may not be indicative of actual MOU.

In response to a data request, SWBT provided 1993 through 1996 total intrastate end office (digital and analog) MOU. This data showed annual increases in MOU throughout the four year period. Consistent with our recommendation for modifications to the SCIS/MO model to include digital switch replacements of all existing analog switches (see SCIS report), Staff recommends that total analog plus digital MOU from this data source be used in the local switching study, modified as described below. Because annual MOU trends are demonstrating an increase and other forward looking assumptions are used (such as all digital switch technology, and ISDN provisioned from 5ESS switches only), Staff recommends that SWBT apply a forward looking 10% per year growth factor, for the next 2 years, using the middle of the 2 year growth period in the local switching study.

SWBT also proposed two adjustments to the total MOU count. First, SWBT proposed an adjustment to account for incomplete calls. SWBT would incur costs for these incomplete calls, but CLECs would not be billed for such calls. To calculate this adjustment SWBT provided Staff with an average length of a local call, the average length of a an incomplete call, and the incomplete call ratio. However, there was no data to support these numbers. SWBT officials stated that Internet usage, which would decrease the incomplete call ratio by increasing the denominator (Total MOU), was not taken into consideration in the calculations provided to Staff. Therefore, Staff believes that due to insufficient data, an adjustment for incomplete calls should not be performed.

In addition, SWBT presented Staff with information regarding intraoffice calls. Because intraoffice calls originate and terminate in the same central office, intraoffice MOUs are counted twice. From separations, SWBT determined that **___** of all MOU are intraoffice. In order to compensate for this inequity, SWBT proposed to decrease MOU by **__** (1/2 of the **___** MOU total). Staff agrees with SWBT that this adjustment is legitimate and should be performed.

Geographic Deaveraging

Finally, SWBT has proposed three rate zones in its arbitration cost studies, although SWBT currently utilizes four rate groups in its tariffs. SWBT has included Springfield in the proposed St. Louis and Kansas City zone (rate group 1). The effect of including Springfield in rate group will increase the costs for local switching in that group due to the low density of lines in Springfield and the high density in Kansas City and St. Louis. In order to more accurately reflect costs in the proposed rate groups, Staff recommends deaveraging costs into four rate groups, identical to those represented in SWBT's existing tariffs.

Summary of Recommended Modifications

In summary, Staff recommends the following modifications to SWBT's local switching study:

SCIS/MO	Modifications to the SCIS/MO model should be performed, as discussed in the SCIS report section.
Hardware Factor	The hardware factor should be switch specific and applied to only the DMS-100 and 5ESS switches, and should be a ratio of hardware investment to non-line investment (total EF&I minus line investment). The hardware factor should be applied to non-line investment.
MOU	Total MOU in each zone should be discounted 9% to account for intraoffice calls, and increased 10% to make the MOU count forward looking.
Deaveraging	Investment/MOU should be deaveraged into four geographic zones, consistent with our zone geographic deaveraging recommendations in other studies.

Description of Study

The non-line switching investment is generated by the SCIS/MO model on a wire center basis. This investment includes all costs for end office switching except line and trunk ports. SCIS/MO also calculates the line related investment which is used in this study. Although SWBT currently utilizes 24 Lucent 1AESS analog switches (12 of them have dual functionality, or are considered tandem/end office switches or class 4/5 switches), they are excluded from the study because they do not represent forward looking technology. Therefore, only digital switches are included in the study.

Total feature hardware investment for the DMS-100 and 5ESS switches is calculated. The hardware investment accounts for the following equipment: (1) conference ports; (2) class model resource card for calling name delivery; (3) input/output port for simplified message desk interface; (4) message waiting power supply for lamps; (5) specialized announcements; (6) tone circuits; (7) private network trunking (i.e., tie facilities for Plexar); (8) data sets; and (9) stutter dial tone equipment. A composite feature hardware factor is developed based on the hardware investment to total investment for DMS-100 and 5ESS switches. The feature hardware factor is applied to the total investment for each wire center regardless of switch type, and the line investment is then subtracted out. The resulting number is the total non-line investment for each wire center. Total non-line investment is then summed for each rate group.

MOU are determined by taking the number of working lines per rate group times the average MOU per line. Data used in these calculations excludes MOU associated with the analog offices, which are not used in the study. Therefore, only digital MOU are used. Further, the MOU calculated in this instance is based on existing data and is not forward looking. Total non-line investment per rate group is divided by total annual MOU per rate group to determine investment per MOU in their appropriate rate groups. Finally, the investment per MOU for each rate group is inserted into the ACES model.

SWITCHING PORT STUDIES

This Report describes SWBT's switching port studies and identifies our concerns. This report is divided into the following sections: (1) Purpose; (2) Concerns and Recommended Modifications; and (3) Summary of Concerns and Recommended Modifications; and (4) Description;

Purpose

SWBT's port studies develop recurring and nonrecurring costs for the following types of ports: analog line-side, 2-wire analog trunk (direct inward dial), DS1 trunk, Primary Rate Interface (PRI), and Basic Rate Interface (BRI). The port investments are produced from either the SCIS/MO or SCIS/IN models (for a detailed description of the SCIS model, see the Staff's SCIS report).

Concerns and Recommended Modifications

The following section identifies our concerns with and recommended modifications to SWBT's cost studies for analog line-side, 2-wire analog trunk (direct inward dial), DS1 trunk, Primary Rate Interface (PRI), and Basic Rate Interface (BRI). In reviewing SWBT's port studies, we have identified the following areas of concern: (1) SCIS/MO modifications; (2) weighting; (3) switch types; and (4) geographic deaveraging.

SCIS/MO Modifications

As discussed in the SCIS report section, several modifications are recommended. Because the port studies use SCIS/MO results, and because SCIS/IN uses SCIS/MO results, the modifications are relevant in this study. Refer to the SCIS report for a detailed description of recommended modifications.

Weighting

As discussed above, investment for the analog line-side port is weighted by the frequency of occurrence of each switch type, while investment for the 2-wire analog trunk port and the DS1 trunk port is weighted by lines in service for each of the technologies. Staff believes that weighting is necessary to develop costs, however there should be consistency in the application of weighting among studies. Therefore Staff recommends that for the analog line-side, 2-wire analog trunk and the DS1 trunk ports, weightings should be according to the number of lines in service for each technology. Staff notes that the BRI and PRI studies are not affected, because they only utilize one technology.

Switch Type

As noted above, the DS1 trunk port study uses a weighting of the 5ESS and DMS-100 switch types. SWBT stated that the DMS-10 and AXE-10 switches were excluded from the study because a version of the SCIS/IN model was previously unable to develop DS1 port costs for these switches. However, SWBT has informed Staff that the port costs can currently be developed using all switch types used to provision the service. Therefore, Staff recommends that DMS-10, DMS-100, 5ESS and AXE-10 switches be used in the DS1 port study. The recommendation that all switch types used to provide any port be included in that port cost study shall apply to all port cost studies (except the PRI and BRI), for the reason specified above.

Geographic Deaveraging

SWBT has proposed one cost for ports, regardless of the rate zone within which the C-LEC is purchasing the element. Consistent with its recommendations regarding other cost studies, Staff recommends SWBT geographically deaverage costs into four rate zones which match SWBT's existing four rate groups. Refer to the geographic deaveraging report for a thorough description of this topic.

Summary of Recommendations

In summary, Staff recommends the following modifications to SWBT's analog line-side, 2-wire analog trunk (direct inward dial), DS1 trunk, Primary Rate Interface (PRI), and Basic Rate Interface (BRI) ports:

SCIS/MO	Modifications to the SCIS/MO studies should be performed, as discussed in the SCIS report.
Weighting	SWBT shall weight all switch port costs by the number of lines served by each switch.
Switch Type	In the case any switch type is used to provide a port, that switch type shall be included in the cost study (excluding BRI and PRI studies).
Deaveraging	SWBT shall geographically deaverage all costs into four rate zones.

Description of Study

This study calculates the investment for Analog Line-Side Ports, 2-Wire Analog Trunk Ports, DS1 Trunk Port and ISDN-PRI and ISDN-BRI ports. Each of these is detailed below.

Analog Line-Side Port

The analog line-side port is a line side switch connection. The analog line-side port study develops costs for a switch port for a 2-wire analog line. Total line investment, produced by the SCIS/MO model, was weighted by the frequency of occurrence of the switch type. Nonrecurring costs were developed based on the costs of the labor efforts required to provide service to a customer, including both connection and disconnection.

2-Wire Analog Trunk Port

The 2-wire analog trunk side port (direct inward dial, or DID) is a trunk side switch connection. The 2-wire analog trunk side port (DID) study develops recurring port costs from data produced by the SCIS/IN model. The investment was then weighted by switch type by the lines in service for each switch type. Nonrecurring costs were developed based on the costs of the labor efforts required to provide service to a customer, including both connection and disconnection.

DS1 Trunk

DS1 trunk port is a trunk side switch connection that provides the equivalent of 24 paths, used primarily for voice communications via customer premises equipment. The DS1 trunk port study develops recurring port costs from SCIS/IN model studies. SCIS/IN produces investment for DS1 trunk ports, which are then weighted based on the total lines in service for each of the technologies. Investment used in the DS1 port studies includes only that associated with the DMS-100 and 5ESS switches. Nonrecurring costs are based on the labor hours required to install the DS1 trunk port and perform the required switch translations.

Primary Rate Interface

PRI provides access for circuit switched voice and data communications including interconnect capabilities, where applicable. The capability is provided using Integrated Services Digital Network (ISDN) architecture. PRI typically includes 23 bearer (B) channels and one data (D) channel. The B channels provide voice and data communications, while the D channel provides out-of-band signaling, although a portion of the bandwidth of the D channel can also be used to carry data traffic. The PRI study develops recurring costs from SCIS/IN model studies, which produce investment for PRI. Although SWBT currently provides PRI service via the DMS-100 and 5ESS switches, the PRI investment study only utilizes 5ESS switches. SWBT has excluded the DMS-100 switches from the study, because on a forward looking basis ISDN will be provisioned by the 5ESS switch. SWBT officials stated the reason for this is that the company was able to obtain superior vendor prices from Lucent.

Nonrecurring costs for PRI include labor costs to establish initial and each additional PRI service.

<u>BRI</u>

BRI is an ISDN service which provides 2 B channels, of 64 kbps bandwidth, and a D channel of 16 kbps. The B channels can be configured to carry circuit switched and/or data switched traffic. As with the PRI, the D channel is utilized for out-of-band signaling, but a portion of the available bandwidth may be used for carrying packet switched data traffic. Again, as with the PRI study, the BRI study develops recurring costs from SCIS/IN model studies, which produce investment for BRI. Only the 5ESS switch is used in the SCIS/IN model studies.

Nonrecurring costs for BRI include labor costs to establish initial and each additional BRI service.

SS7 COST STUDIES

This Report describes SWBT's SS7 cost studies and identifies our concerns. This report is divided into the following sections: (1) Purpose; (2) Concerns and Recommended Modifications; (3) Summary of Recommendations; (4) Description of CCSCIS; and (5) Description of Specific Studies.

Purpose

SWBT has submitted TELRIC signaling studies for Line Information Database (LIDB) validation query investment, calling name delivery query investment, toll free calling database query investment, signal transfer point (STP) investment, and SS7 transport investment. Common Channel Switching Cost Information System (CCSCIS), a BellCore model, determines investment for signaling equipment based on numerous adjustable and non-adjustable inputs. Depending on the particular service or signaling equipment, the investment is assigned to either a per query, per octet (eight bit byte), or in the case of STPs, on a monthly per port and nonrecurring per port basis. The investment per unit is then fed into SWBT's ACES model where annual cost factors, operating expenses, a levelized inflation factor, and Commission assessment are applied to determine TELRIC costs.

Concerns and Modifications

The following section identifies our concerns with and recommended modifications to SWBT's SS7 cost studies. In reviewing SWBT's SS7 studies, we have identified the following areas of concern: (1) COM; (2) link utilization; (3) STP ports; (4) 800, LIDB and Calling Name queries; (5) discount levels.

COM

As discussed in the Cost of Capital and Capital Structure for SBC Section, Staff recommends a COM of 10.36%.

Link Utilization

Before describing link utilization, a brief summary of link functionality will be given. A and E links connect SSPs (end office, tandem and end office/tandem switches) to local STPs. D links provide connectivity between local and regional STPs. C links are used to connect mated STP pairs. B links are used to connect STPs to other STPs of the same level (local to local STPs, regional to regional STPs). F links connect SSPs to other SSPs. SCP link connect SCPs to regional STPs. Currently, SWBT inserts the following link utilization into the CCSCIS model (SWBT does not use E links in the SS7 cost studies):

Link	Utilization
A link	**____**
B link	**____**
C link	**____**
D link	**____**
F link	**____**
SCP link	**____**

Because A and D links carry 800, LIDB and Calling Name queries to the SCP, any projected increase traffic on these links should be incorporated into the model. Staff has reviewed data which shows LIDB, 800 and Calling Name queries are increasing, therefore utilization on links carrying that traffic should increase as well. Additionally, the implementation of local number portability will increase traffic on the A and D links.

Discussions with a SWBT subject matter expert produced **____** as an annual approximation of increased utilization due to normal growth. With regard to the effects of local number portability implementation, SWBT's subject matter expert stated that a good estimate of the effects on utilization would be an increase of **_____ ** times. It is undisputed that A and D links will experience increased utilization due to normal growth and local number portability implementation. However, SWBT did not provide any forward looking forecasts of such utilization. Because of the lack of forward looking data, and due to the discussions with SWBT's signaling subject matter expert, Staff recommends 10% per year growth on A and D links, and multiplying the forecasted utilization by 2.5 to account for local number portability. In addition, SCP links will experience increased utilization due to increases in 800, LIDB and Calling Name queries. Staff recommends a 10% per year growth factor on the SCP links for reasons cited above. Staff does not propose any modifications to the C links. C links, which connect mated STP pairs, should not experience an increase in utilization. Therefore, Staff proposes the following link utilization:

Link	Utilization
A link	0.4613
C link	0.129 (no change)
D link	0.4047
SCP link	0.1876

STP Ports

With regard to STP ports, Staff recommends an increase in ports of 10% per year. Port increases are being realized due to normal increases in usage. Further, the onset of number portability should have the effect of increasing ports due to an increased number of queries. SWBT provided Staff with the following historical data which demonstrates increasing trends in Kansas City, St. Louis and Springfield ports:

STP location	Ports 9/94	Ports 9/96	Ports 2/97	%Increase/year
Kansas City	** ___ **	** ___ **	** ___ **	** ___ **
Springfield	** ___ **	** ___ **	** ___ **	** ___ **
St. Louis	** ___ **	** ___ **	** ___ **	** ___ **

As demonstrated by the above figures, a 10% per year port increase is by all means a conservative estimate of forward looking occupancy. The 10% per year is realized in even the lowest growth STP pair, without the effects of local number portability.

800, LIDB and Calling Name Queries

Currently, SWBT uses the following number of busy hour BH queries per second in the CCSCIS model:

	LIDB	800	Calling Name
Queries	** ___ **	** ___ **	** ___ **

Although SWBT could not provide us with forward looking data, SWBT provided historical trends that demonstrated yearly increases for LIDB, 800 and Calling Name queries, respectively. SWBT could not provide forward looking estimates of BH queries/second so Staff was forced to estimate such forward looking trends based on the historical data. Staff proposes a 10% annual increase for all types of queries. Staff believes this to be a very conservative estimate.

Discount Levels

Although Staff is not recommending any modifications with regard to switch discounts for the CCSCIS model, Staff believes that SWBT's reported discount for SCP equipment may be less than the discounts actually received. Based on information discovered while attempting to determine SCIS/MO discounts, Staff has reason to suspect that SWBT may be receiving additional discounts. Staff does not have data to propose an alternative discount.

Summary of Recommended Modifications

SWBT' SS7 studies utilize the CCSCIS models, release 3.9 and 4.2.1. Both models use an immense quantity of inputs. Specifically, Staff notes that discount levels were not verified and could very well be incorrect. Staff recommends that SWBT make the following modifications to its SS7 cost studies:

COM	Consistent with our recommended modifications to other studies, COM shall be 10.36%.
Link utilization	

Link	Utilization
A link	0.4613
C link	0.129
D link	0.4047
SCP link	0.1876

Ports	Ports shall be forward looking for two years using a 10% per year growth factor
BH queries/second	BH queries/second shall be forward looking for two years using a 10% per year growth factor.

Description of CCSCIS

SWBT utilizes two versions of the CCSCIS model - release 3.9 and release 4.2.1. SWBT utilizes release 3.9 for the SCP investment only. As with the SCIS/MO studies, SWBT uses the average mode for both releases of the CCSCIS model. The average costs use the same methodology of the SCIS/MO model.

Release 3.9

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Service Demand

Service	Queries/second	Database Records	% Vertical Queries
800	** **	** **	** **
LIDB	** **	** **	** **
CNAM	** **	** **	** **

** **.

Due to the large quantity of information involved in the numerous input screens, only those in which modifications are being recommended will be discussed (see Section 4. - Concerns and Recommended Modifications).

Description of Specific Studies

LIDB Validation, Calling Name Delivery and Toll Free Calling Data Base Query Investment Studies

These studies utilize investment from the CCSCIS model other related data to determine the incremental cost of the service or signal control point (SCP), the signaling network link connecting the SCP to a regional STP, and the port on the regional STP. The SCP is a remote database within the SS7 network. The SCP supplies the translation and routing data needed to deliver advanced network services. The STP is essentially a packet switch within the SS7 network which routes information to other STPs, SCPs, or service switching points (SSPs). SSPs are essentially end office or end office/tandem switches equipped with SS7 functionality. See Attachment A for a schematic of the investments being recovered through the LIDB, toll free and calling name cost studies.

The CCSCIS model produces a busy hour (BH) investment per octet for SCP link terminations on the regional STP. SWBT then adds a forward looking investment per octet. The forward looking investment is comprised of the following:

Name	Amount	Functionality
AcceSS7	**__________ **	billing equipment
IDST	**__________ **	link interfaces
Netpilot	**__________ **	administrations/operations control
Secure7 for SS7	**__________ **	network reliability
Total	**__________ **	

The **__________ ** forward looking investment is being added to introduce usage measuring ability and to improve the administration and reliability of the network. The investment figures reflect Engineering Furnished & Installed (EF&I) costs, and were provided by network engineers. Some of the projects are not completed yet, therefore a portion of the above figures reflect actual costs while the remainder is a projection of planned expenditures.

The **__________ ** is divided by the total octets per BH on all SWBT A, B, D, SCP and ISCP links. This results is an investment of **__________ ** per BH octet.

Additionally, investment for the SCP link connection with the regional STP (facilities and terminations)is provided by the CCSCIS model. The investment, which is the cost of the actual transmission facility, is presented on a per octet basis. The sum of the SCP link termination on the regional STP per octet, the forward looking investment per BH octet, and the SCP link connection with the regional STP (facilities and terminations) per BH octet is multiplied by an octets/query ratio to determine BH octet investment per query. The SCP BH investment per query, produced from CCSCIS, is added, thus producing the total investment per BH query. BH to business day ratio and equivalent business days per year ratios are applied, producing an investment per query at any time. This same procedure is used for the LIDB validation query investment, calling name delivery query investment and toll free calling database query investment.

For the toll free calling database query investment, an additive investment for a more complex query (such as a query requiring additional time-of-day or day-of-week decisions) covers the additional cost in the SCP. The additive investment for a complex query was determined by subtracting the BH investment per Basic 800 query from the BH investment per Vertical 800 query. BH to business day ratio and equivalent business days per year ratios are applied, producing an investment per query at any time.

SS7 Transport

The SS7 transport study utilizes investment from the CCSCIS study and other related data to determine the incremental cost of the STP and the D links which route traffic from the STP to the next point in the signaling network (the regional STP). See Attachment B for a schematic of the investments being recovered through the SS7 transport cost study. The CCSCIS model produces a busy hour (BH) investment per octet for D link terminations on the local and regional STPs. SWBT then adds a forward looking investment per octet, as described above.

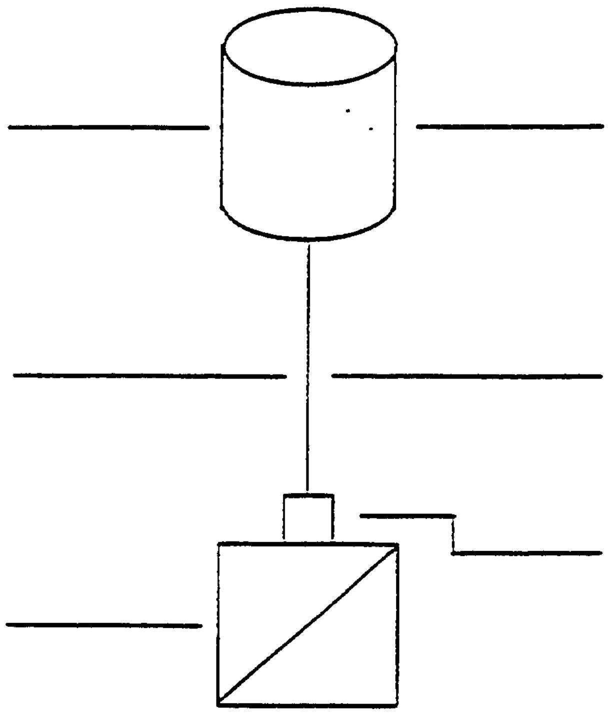
Additionally, investment for the D links connecting the regional STP to the local STP is provided by the CCSCIS model. The investment, which is the cost of the actual transmission facility, is presented on a per octet basis. The sum of the regional and local STP termination investment per octet, the forward looking investment per BH octet, and the D links connecting the regional STP to the local STP per BH octet is the total investment per octet. BH to business day ratio and equivalent business days per year ratios are applied, producing an investment per octet at any time.

STP Port

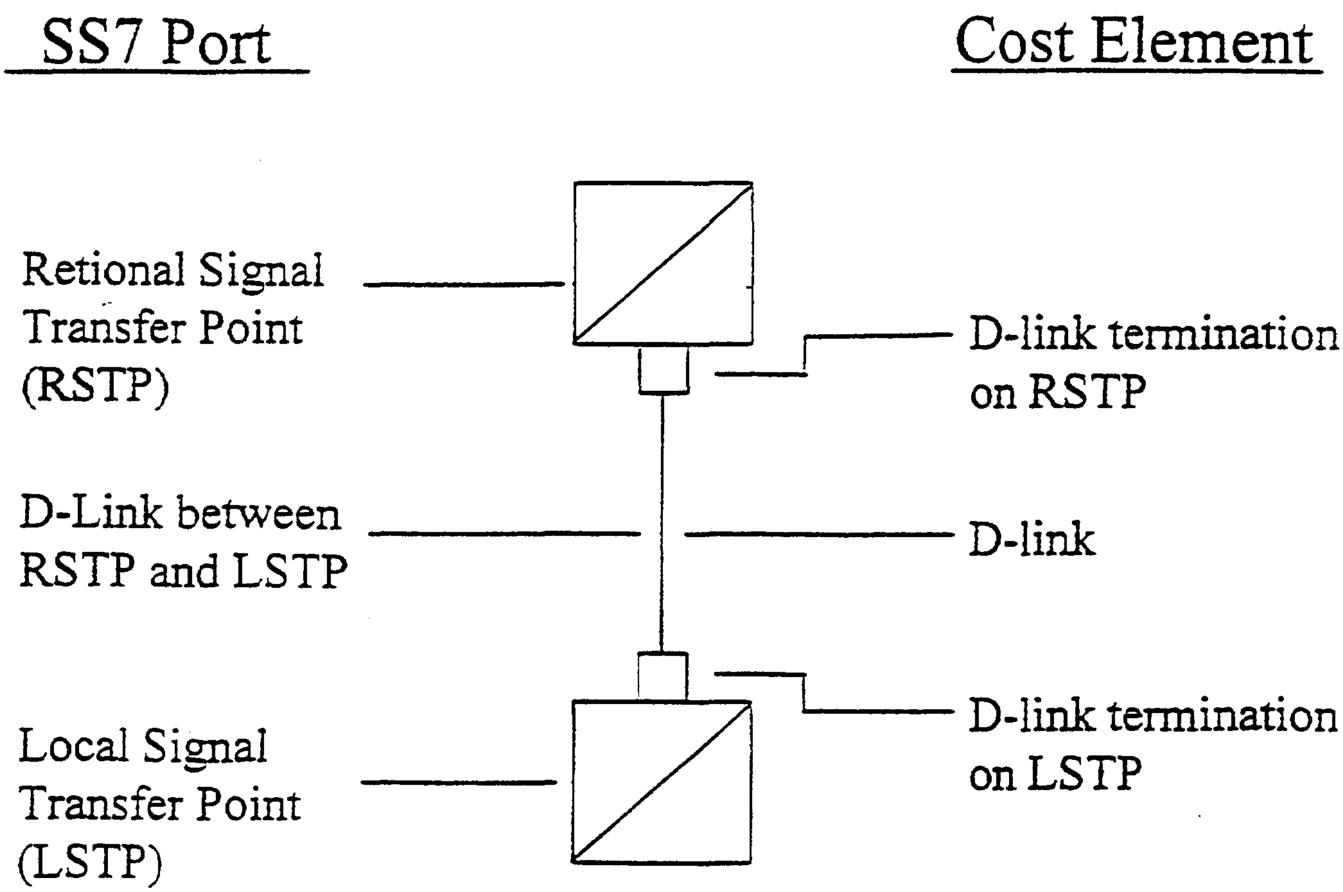
The STP port investment study identifies the forward looking cost of one port in an STP. The STP port provides an entry point where a competitive local exchange carrier (C-LEC) would gain access to SWBT's signaling network. Each query entering the STP has a Global Title Type assigned to a field which is used to direct the STP to the correct internal routing table. The table uses other data in the message, such as dialed telephone number or calling card number, to determine the Signal Point Code used for routing. The Global Title Translation is the effort required to establish the tables in one SWBT STP pair. A Signaling Point Code is a nine-digit number that uniquely identifies an individual entry (STP, SCP and SSP). All signaling networks use Signaling Point Codes to perform routing.

Costs for STP ports are separated into recurring and nonrecurring. The recurring port costs are based on investment per port, which was developed using the CCSCIS model. Nonrecurring costs are based on STP port installation and Global Title Translation per STP pair. The time required to perform the translations and the Exchange Carrier Relations processing was multiplied by the appropriate labor rates and summed. The time required to install the Global Title Translation and perform the Exchange Carrier Relations processing for one STP pair was multiplied by the appropriate labor rates and summed. Finally, the time required to install the Signaling Point Code and perform the Exchange Carrier Relations processing for one Signaling Point Code in an STP pair was multiplied by the appropriate labor rates and summed.

SS7 Parts Included in Query Cost

SS7 Port		Cost Element
Service Control Point (SCP)		SCP investment per query
Link between RSTP and SCP		SCP link
Regional Signal Transfer Point (RSTP)		RSTP SCP Link Termination

SS7 Parts Included in SS7 Transport Cost



Tandem Switching Cost Study

Tandem switches are those switches that connect one trunk group to another trunk group. A tandem switch is an intermediate switch or connection between an originating telephone call location and the final destination of the call. The tandem point passes the call along. The purpose of the tandem switching study is to identify the TELRIC per minute of use costs of tandem switches. The tandem switching cost per minute of use represents the cost of tandem switching equipment required to establish the talking/conversation path, and maintain the path for the duration of a call between central offices.

Purpose

The purpose of the tandem switching total element incremental cost study is to identify the cost per minute of use of tandem switches.

Concerns

The primary model used to determine tandem switching investment is the Network Cost Analysis Tool (NCAT). Like SCIS, NCAT is a Bellcore model. Because NCAT is a Bellcore model and is used by more companies than SWBT and is subject to much scrutiny, no concerns were found specific to the model.

Concerns with the tandem switching cost study are related to SCIS and COSTPROG. Investments in switching and facility by technology per circuit mile are obtained from SCIS. Fixing the problems with SCIS and alleviating the double counting of end-office/tandem switch investment in SCIS will alleviate the concerns with the tandem switching cost study. Termination investment by technology, per circuit is generated by COSTPROG. Alleviating the concerns with COSTPROG regarding fill factors will alleviate any related concerns.

Summary

To complete the tandem switching cost study SCIS, NCAT, and ACES are used. A detailed description of SCIS may be found in the switching cost study section. A description of NCAT may be found below. The investment in tandem switching equipment is obtained from SCIS. This value is plugged into NCAT, which yields tandem switching investment per minute. This value is plugged into ACES. Through ACES, factors related to sales tax, EF&I investment, TELCO labor and engineering, miscellaneous costs, power, buildings, depreciation, cost of money, income tax, equipment expenses, building and grounds maintenance, administrative expenses, ad valorem taxes, and a Commission assessment are applied to determine an annual recurring cost per minute of use.

Summary of the Network Cost Analysis Tool (NCAT)

** The remainder of this page has been deemed Highly Confidential. **

** This page has been deemed Highly Confidential in its entirety[3]. **

[3] ** The associated footnote was deemed Highly Confidential **

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